

AN ACCESSORY FISSURE AND LOBE OF THE LEFT LUNG: CASE REPORT

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ABSTRACT

Anatomical variations of the lung lobes and fissures are very common. They have been described by many authors, using imaging techniques, fewer studies were done using gross anatomy. The left lung classically has one fissure, the oblique fissure and two lobes namely the upper and lower lobes. In the present case, we report a variant oblique fissure of left lung. Such abnormal fissures are clinically important for identifying broncho-pulmonary segments.

INTRODUCTION:

The left lung classically has one fissure, the oblique fissure and two lobes namely the upper and lower lobes. The right lung has two fissures, an oblique and a horizontal dividing it into three lobes namely the superior, middle and inferior (1). The oblique fissure cuts the vertebral border of both the lungs at the level of 4th or 5th thoracic spine. Traced downwards on the medial surface it ends above the hilum; traced downwards on the costal surface it continues across the diaphragmatic surface and turns upward on to the medial surface to end just below the lower end of the hilum (2).

Horizontal fissure, seen only in the right lung begins laterally at the oblique fissure and runs almost transversely across the costal surface to the anterior margin and around this margin back to the hilum to separate a wedge-shaped middle lobe from the upper lobe (3). It passes at the level of midaxillary line to the anterior border of the lung at the level of sternal end of 4th costal cartilage (1). The knowledge of anatomical variations of the lobes of the lung is important for identifying broncho-pulmonary segments, and for clinicians to successfully perform pulmonary lobectomies, and for radiologists to correctly interpret X-rays and CT scans.

MATERIAL AND METHODS:

During routine dissection of thoracic region of an adult male cadaver of middle age, we noticed an anomalous left lung, which displayed variation in the pattern of fissure and lobe. There was no history of pulmonary disease in the individual. The lung variant fissure and lobe were studied and appropriate measurements were taken. The specimen was photographed (Fig.1).

OBSERVATIONS

the left lung showing the classical oblique fissure which runs from the inferior border upward and backward across the costal surface and reach the posterior border about 6 cm below the apex.

An accessory fissure was noted which divides the left upper lobe into an additional incomplete middle lobe (Fig.2).

This fissure originated at the hilus, ran downwards and forward in the medial surface and then transversely at the level of the fourth costal cartilage toward the oblique fissure.

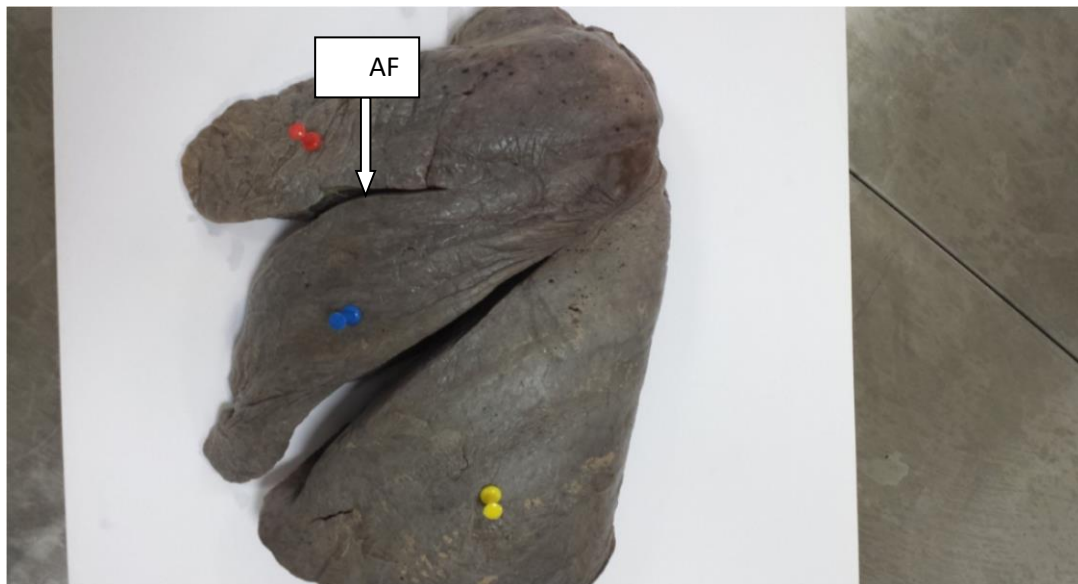


Fig-1- Left lung with accessory fissure (AF) in the upper lobe



Fig-2- Incomplete fissure (AF) of left lung

DISCUSSION:

During the development, as the lung grows, the spaces that separate individual bronchopulmonary buds become obliterated except along two planes, evident in the fully developed lungs as oblique and horizontal fissures. Absence or incomplete fissures could be due to the obliteration of these fissures either completely or partially. Accessory fissure could be the result of non-obliteration of spaces which normally are obliterated (4).

Several authors (1, 2, 3, 4, 5, and 6) have reported varying percentages of incidence of the incompleteness of the fissures. Medlar(6) in his examination of 1200 pairs of lungs found incomplete oblique fissure in 10.6% and 25.6% of the left- and right-sided lungs, respectively and incomplete horizontal fissure in 17.1% of the right-sided lungs. Oblique fissures were absent in 7.3% of the left-sided and 4.8% of the right-sided lungs; horizontal fissure was absent in 45.2% of the right-sided lungs. Knowledge of an accessory fissure is helpful for clinicians in order to differentiate it from other normal anatomical and pathological structures. Interpretations of various radiographic appearances of interlobar fluid are important for clinicians. In x-ray, incomplete fissure always give an atypical appearance of pleural effusion. Many a times the accessory fissure fails to be detected on CT scans, because of their incompleteness, thick sections and orientation in relation to a particular plane (8).

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